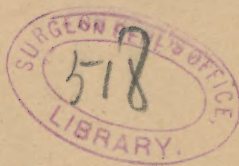


SKENE (A.J.C.)

Senile endometritis



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SENILE ENDOMETRITIS.*

BY ALEXANDER J. C. SKENE, M. D.

The prevailing opinion is that cancer is the only disease of the uterus to be looked for after the menopause. There is a decided immunity of the uterus from inflammatory affections in aged women. In the past and present authorities have agreed in stating that endometritis ends in recovery at the change of life. These opinions are true only to a certain extent. I have seen a number of cases of endometritis which persisted, in a modified form, after the menopause and a considerable number in which this affection appeared long after the climacteria. The pathology and natural history of endometritis in advanced life differ so from inflammatory affections of the uterus in middle life that I concluded eighteen or twenty years ago that senile endometritis was a special, distinct affection worthy of more attention than had been given to it. Fritsch in *Billroth's Handbuch für Frauenkrankheiten* treats of this affection and three or four others have referred to his contributions, and that is all I can find in the literature; even at the present time, there are only four or five authors who make any allusion to it.

The subject was first brought to my notice most forcibly in the year 1875. A patient, the relative of a physician, aged sixty-eight, came under my care while suffering from a sero-purulent discharge from the uterus. I made a diagnosis of cancer but found I was mistaken. She recovered, but I could see that this affection differed from endometritis as it occurs in middle life. From that time I have kept such cases carefully under observation and I have collected facts sufficient to complete the natural history of the disease.

Pathology.—The inflammation may be limited to the cervix alone, but as a rule it involves the entire mucosa. When it occurs soon

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after the menopause, and especially if it is a continuation of a cervical endometritis that existed before the menstrual function is finally suspended, it assumes a catarrhal form, modified. As usually seen, it is suppurative, the discharge being sero-purulent. When it begins as a catarrh it gradually progresses to a suppurative form. In the catarrhal form, the discharge, at first a leucorrhœa, diminishes and changes from the translucent tenacious discharge to a darker glue-like material, associated with a sero-purulent matter. The change results from the atrophy of the glands of Naboth which secrete the leucorrhœal discharge of catarrhal endometritis. The character of the discharge is modified first by the atrophy which follows the menopause and by changes of structure which are produced by the disease itself. It is not until the senile involution is complete that the pathological anatomy of the disease is fully developed and shows the characteristics, which distinguish this affection from all other forms of endometritis.

There is first a general atrophic thinning of the whole mucous membrane. The epithelium changes from ciliated to cylindrical, then pavement and finally is almost entirely lost. The surface around the os externum becomes irregular, thin and shows a bluish red color, which presents a marked contrast to the appearance of erosion seen in endometritis of early life. Granulations of low vitality appear on the endometrium and minute extravasations of blood occur and are seen as small pigmentation spots. The glands become obliterated entirely by the morbid process and hence there can be no secretion but, instead, pus formation. There is molecular death of the structures but extensive ulceration is rare. During the development of this affection, the atrophy of the muscular structure of the cervix proceeds faster than in the mucous membrane of the cervix and there is an inversion of the membrane which gives a peculiar appearance. Around the os externum, there is an elevated bluish red ring which stands out in marked contrast to the normal mucous membrane of the vagina. Laceration of the cervix uteri frequently accompanies senile inflammation and, when there is much scar tissue present, the suffering is more marked. Stricture, partial or complete, at the os internum or externum is frequently formed. Closure of the os internum is caused in some cases by retroflexion of the uterus. In this condition the discharge is intermittent. For a number of days the flow stops and then a free discharge of offensive pus takes place. Complete occlusion of the canal is caused by adhesions of the disintegrated mucous membrane, a result which follows suppurative in-

flammation of the mucosa but is rarely if ever present in catarrhal forms of inflammation. Pus accumulates above the stricture and distends the body of the uterus giving rise to a condition which resembles an abscess in pathology, symptoms and signs. If the stricture is not extensive the pressure will force it open, pus will be discharged and there will be repetitions of the closure, accumulation, reopening and discharge. In most cases it is necessary to open and dilate the canal before relief can be obtained. When the disease has existed long enough to destroy the mucous membrane it may end in cicatrization, but there is a marked tendency to continued suppuration. The disease can hardly be called self-limiting.

In nearly all the cases that I have seen in which there has been, for a time, a stenosis of the canal, the uterus has become greatly distended and prolapsed or retroverted. The cavity of the uterus measured three and a half inches in one case and four inches in another. The senile atrophy may be delayed by the presence of endometritis, and the uterus may remain larger than it should be in old age, but that does not account for nor is it like the enlargement from distention. In the enlargement of the cavity from distention with pus the walls become very thin, while in the other the normal thickness of the walls continues.

Causation.—A continuation of endometritis, acquired before the menopause, accounts for a certain number of the cases, especially of those in which the disease is limited to the cervix. Some of the severer cases, in which the disease involves the body of the uterus, are caused by displacements, prolapsus or retroversion, especially retroversion. Prolapsus in a marked degree exposes the cervix to irritation and, if it continues for long, inflammation and ulceration will appear around the os externum, and the mucous membrane of the canal becomes involved. The atrophy of the cervix is retarded, or else infiltration takes place and keeps the cervix enlarged. These cases are easily controlled in case the displacement can be relieved. Corporeal endometritis is frequently caused by retroversion. The displacement interrupts the escape of the secretion of the mucous membrane; its retention causes decomposition and inflammation of a purulent variety. Stricture at the os internum would cause inflammation in the same way as retroversion, and the two are often found together, but in the majority of cases the occlusion is the result of the inflammation.

Acute or latent gonorrhœa may cause this form of endometritis, but I am not sure that I have ever seen a case of acute gonorrhœal

endometritis after the menopause. Old neglected cases I have seen several times.

Senile vulvitis and vaginitis, due to malnutrition and inattention to cleanliness, extend and cause endometritis in advanced life but, as the latter very often is the cause of the former, it is difficult to decide in a given case whether the disease began in the uterus or vagina. Fibromata of the uterus act as a very important cause of the affection. Although uterine fibromata frequently disappear after the menopause, the endometritis which accompanies the neoplasm continues but changes from a catarrhal to a purulent form. One patient who had a small fibroid passed the climacteria and was free from all uterine disease until she was sixty years old. She then developed an endometritis attended with such a profuse sero-purulent discharge that she sought relief of her family physician. He made a diagnosis of cancer and she was brought to me for operation. I found the remains of the fibroid in the cavity of the uterus. It was removed, and, though the serous element of the discharge subsided at once, the endometritis persisted and only yielded to treatment after several months.

I have often wondered why the surgeons, who find so many charges against fibromata, such as their danger to life and health, have never found senile endometritis caused by them. Perhaps they have overlooked this matter, or it may be that these are cases which they have mistaken for cancerous.

Fibromata cause endometritis after the menopause by delaying senile atrophy and also by sloughing which takes place in rare cases. Catarrhal endometritis usually accompanies fibromata and changes to the purulent variety after the menopause, as already stated.

Another curious fact is that although the fibroid that causes the metritis may slough and come away, or become pedunculated and the surgeon remove it, the metritis continues. This is the opposite to that which occurs in middle life. If a fibroid is removed in a young subject the endometritis usually subsides when this cause is removed. I saw one lady, fifty-four years old, who had a submucous fibroid of the uterus. She had a well-marked endometritis which was being treated without benefit. The fibroid sloughed and was completely removed. She had septicæmia from which she recovered, but the purulent endometritis persisted and only yielded to treatment after long-continued efforts. I supposed that the metritis in that case was obstinate owing to its being caused by sepsis, but I found that a like inflammation might be set up with only the presence of a fibroid to

account for it. A patient sixty years old had, judging from her history, a catarrh of the uterus at the menopause. It continued in a changed form and a short time before I saw her she became worse, had more severe pelvic pains and tenesmus with a very free sero-purulent discharge. I expected to find an endometritis and prolapsus but found a small, pedunculated fibroid that had been expelled from the body of the uterus and occupied the dilated cervix. I removed it and the patient was relieved and improved but the endometritis of the purulent form continued and, although much less severe, was difficult to cure.

Symptomatology.—The symptom which first attracts attention is a discharge which varies in character according to the extent and stage of the inflammation. When a cervical endometritis is present at the menopause the characteristic leucorrhœa gradually disappears or else changes to that of the senile form of the affection. The tenacious secretion of the cervical glands is replaced by a sero-purulent discharge which is more like a vaginal leucorrhœa. The discharge, sooner or later, causes a subacute or senile vaginitis and vulvitis. There is so very often prolapsus of the vaginal walls and uterus complicating the metritis that there is pelvic tenesmus and some disturbance of the vesical and rectal functions.

These are the chief symptoms in the early stage of this affection when prolapsus is the only complication. When the uterus is retroverted and owing to imperfect drainage the products of inflammation accumulate and distend the uterus, there is more pain and the constitutional disturbance is much more defined. There is often a rise of temperature and the pulse increases. The digestion is deranged and ultimate nutrition impaired in cases of long standing. This is due to pain, reflex disturbance and more especially, perhaps, to a slight chronic sepsis. The malnutrition increases the appearance of premature old age and the dry, bronzed appearance of the skin is suggestive of malignant disease. In cases in which true stenosis takes place at the os internum or at any point in the canal of the cervix, the symptoms are usually very pronounced. The pain is acute and compels the patient to rest in bed. The pain differs from that of acute pelvic inflammation in being slight at first but gradually increasing, while the pain of acute disease is violent at first and gradually subsides. The constitutional disturbance is more marked in this condition or complication than in any other. There is symptomatic fever. In one of my patients the temperature reached 102° F. I have already stated that stenosis may be the cause or consequence of the metritis.

The imprisoned secretion and broken-down tissue causes the inflammation or the stenosis may be caused by the inflammation. That accounts for the fact that in some cases the distention of the uterus and the symptoms are gradually developed, but in others they come on somewhat more abruptly.

Physical Signs.—Inspection shows, in most all cases, patches of inflammatory redness about the vulva which is peculiar to senile vulvitis, the contrast between the red portions and the anæmic appearance of the membrane generally is well defined. With the aid of the speculum the signs of the same form of vaginitis are observed. Of course the vagina and vulva are not involved in all cases but, as a rule, they are. In quite a few it has been limited to the upper part of the vagina and mostly the vaginal portion of the cervical membrane. The character of the discharge is best studied through the speculum. Its character is of much value as a sign. Indeed upon this evidence, senile endometritis is distinguished from other affections and forms of inflammation such as cancer and gonorrhœa. The appearance of the discharge differs from uterine leucorrhœa in being less tenacious owing to the absence, in varying degrees, of the secretion of the glands of the cervix. The color also indicates the composition to be sero-purulent, and in this it is more like the discharge in specific inflammation and is similar in appearance to that found in the early stage of cancer. The differentiation between the discharge in senile endometritis, specific metritis and cancer must be made by the microscope if one would make the distinction at once, *i. e.* without waiting for the full development of the history. In senile metritis, pus, serum, disintegrated tissue and changed or broken-down epithelium and bacteria are found. In cancer, the discharge is sero-sanguinolent and later in the progress of the disease contains broken-down necrotic tissue and elements of the neoplasm. The gonorrhœal discharge can be distinguished by the specific germ of that affection. Without the aid of the microscope it is impossible to make a positive diagnosis between the specific or non-specific origin of senile endometritis, but fortunately the indications for treatment are the same whatever the cause of the affection may be. The history may show that gonorrhœa is the probable cause, especially if the disease comes on abruptly, was acute at first and involved the vulva and urethra first.

The differentiation between this affection and cancer of the cervix is made by observing that in cervical endometritis there is the characteristic discharge and degeneration and atrophy of the mucous membrane, and in cancer there is, in addition to the discharge, infiltration

of the tissues, *i. e.* neoplastic growth. When the disease is fully developed in the body of the uterus the clinical history resembles malignant disease but can be readily diagnosed by the fact that pus in quantity accumulates in the cavity of the body of the uterus in metritis, while that never occurs in cancer. By aspirating the uterine cavity the material drawn off will be pus and perhaps a little blood, while in cancer it is serum, blood and broken-down cancer tissue. The aspiration is easily made by using a small curved pipette with a rubber bulb at the end. By compressing the bulb and introducing the pipette and removing the pressure, enough material can be withdrawn to show its character and decide the diagnosis. Of course if a microscopical examination can be obtained by an expert the diagnosis can be made much more certainly. The history of the progress of the disease aids in the diagnosis. Cancer progresses steadily but metritis continues about the same or slowly yields to such treatment as will have no effect in retarding or curing cancer. Adenoma may be mistaken for senile endometritis, but the differential diagnosis is easily made. Adenoma uteri occurs earlier in life, generally about the menopause, and is attended with menorrhagia or metrorrhagia as the most marked symptom. This difference is diagnostic because menorrhagia does not occur in this form of metritis. There is not, as a rule, any purulent discharge in adenoma. By using a small curette a portion of the adenomatous growth can be removed for examination which will complete the diagnosis.

Treatment.—When the disease is confined to the cervix a douche of a solution of borax, three drachms to the quart, gives much relief and prevents the discharge from keeping up vaginitis. Sulphate of zinc, one drachm to the quart of water, is very effective in case the borax fails. The hot water douche, as used in uterine disease generally, is not of much value in the senile form. If there is any prolapsus or other displacement it must be corrected by the use of medicated tampons until the inflammation is relieved. Sterilized absorbent cotton covered with boroglyceride, glycerin and tannin or white vaseline answer the purpose. I have tried prepared wool, for tampons, but it is more irritating and has to be changed more frequently. Astringent and alterative applications are useful in relieving the cervical inflammation but any caustics, even the mildest, do harm rather than good. I have most faithfully tried carbolic acid and iodine, which are so effective in ordinary metritis, but these agents are not satisfactory in the senile form of the disease. One or two applications of a combination of carbolic acid and tincture of iodine may do good but it

should not be repeated many times. All caustics rather encourage the breaking-down of the atrophied tissue and when the slough separates the surface left does not incline to heal but to suppurate. The best results have been obtained from the use of boroglyceride with tannin, glycerin and tannin, fluid extract of *hydrastis canadensis* and a mild solution of acetic acid, one drachm to two ounces. The canal should be thoroughly washed out with clean water and the application made with a pipette.

I generally begin the local treatment with dilute acetic acid or tincture of iodine four parts and carbolic one part; an application of either of the above twice in the first week. This answers the best when the discharge is very free. Following this a mixture of twenty grains tannic acid in an ounce of boroglyceride. This is a thickish material which is difficult to apply. I manage by warming the mixture and using a pipette with an opening in the end as large as the size of the glass tube will admit. Tannin and glycerin were used almost altogether some years ago, now I prefer the boroglyceride and tannin. The fluid extract of *hydrastis canadensis* is easily used and has a very good effect, and I fall back on that when the others do not do well. Iodoform is the most efficient and when it can be freely and properly applied supersedes all other agents. Indeed were it not for its being difficult of application to the canal of the uterus it would meet all requirements. I have only used other remedies, such as I have mentioned, because they were so much more easily applied and have not the offensive odor of iodoform. I was first led to use iodoform in senile endometritis by observing its remarkable effects in the treatment of ulcers in general surgery. Dr. Fordyce Barker used it in cases of cancer of the uterus with great benefit. He used iodoform suppositories made in convenient form to introduce into the uterus. The results that he obtained were so favorable that I am now inclined to believe that some of the cases that he believed to be cancers were really cases of senile endometritis. Many gynæcologists have made that mistake in diagnosis and it is no disparagement to suppose that Dr. Barker may have occasionally fallen into the same error. I presumed that the effect of iodoform was due in a measure to its antiseptic qualities but learned that it was not a germicide to any degree sufficient to explain its effect in checking suppurative inflammation. The *Bulletin Général de Thérapeutique* contains a full discussion of the subject.

“Maurel, who is well known by his researches on the leucocytes has undertaken to solve the problem why iodoform, which is so effica-

cious in preventing or suppressing suppuration, should apparently have so little action on the pyogenic staphylococci.

"He first experimented with a virulent culture (on *gélose*) of staphylococci in the presence of leucocytes. The latter speedily absorbed the staphylococci but succumbed in less than two hours. In the control field, however, they accomplish their evolution and live from twelve to twenty-four hours. Maurel finds that the death of the leucocytes under the influence of the pus micro-organisms is due to a toxine contained in the bodies of these microbes, not to the mechanical action of the staphylococcus or to the products which the latter yields up to its environment. Under the influence of these same staphylococci, the red corpuscles become diffuent in fifteen hours and then disappear.

"Another series of experiments were made by subjecting the figured elements of the blood to the action of iodoform in the dosage of 10 to 2.50 per kilogramme of blood. Neither the smaller nor the larger doses were found to be toxic to the leucocytes; the vital activity of these latter was, on the contrary, augmented, and the action on the red globules was nil.

"A third series of experiments show iodoform to be without marked action on cultures of the staphylococcus aureus and albus.

"In a fourth series of researches, Maurel subjected both the leucocytes of human blood and cultures of the staphylococcus to the action of iodoform in varying proportions and under varying conditions. His conclusions are as follows :

"1. Iodoform attenuates the virulence of the staphylococcus. While in the virulent state, this micrococcus kills our leucocytes in less than two hours; when it is subjected along with the leucocytes to the influence of iodoform, the latter preserve their movements for eight hours, at least, and even complete their evolution.

"2. The staphylococci which have thus lost a great part of their virulence (and to such a degree that they are seemingly devoured by the leucocytes with impunity) keep all their reproductive energy unimpaired, so that virulence and the power of reproduction are independent properties.

"A final conclusion is deduced that it is in both these ways—according to Maurel it is by augmenting the energy of the leucocytes and attenuating the virulence of the pus microbes—that iodoform opposes suppuration, which is, in the language of bacteriology, a massive slaughtering of the leucocytes." These teachings are in harmony with

clinical experience as to the benefits of iodoform in preventing or arresting suppuration.

There is considerable difficulty in applying iodoform to the cavity of the body of the uterus in sufficient quantity to be effective. Suppositories made with cacao butter are not retained in the cervix, and while they remain in the cavity of the body for a time, there is not enough retained to give the full effect. I have used a solution in boiled linseed oil and also an ether solution, but the latter causes much irritation and the former does not hold enough of the iodoform. The best is the dry fine powder which can be introduced through a small cannula. The next best (and more easily introduced) is the fine powder held in suspension in acacia and water by agitation and then instilled with a pipette.

When the disease (limited to the cervix) is complicated with scar tissue resulting from old lacerations, I have operated with the result of relieving some of the neuralgic pain and with benefit to the inflammation. It is difficult to get good and prompt union. In fact, some of the operations have been failures.

The treatment of the corporal form of this affection is rendered more difficult by certain complications such as prolapsus, stenosis of the canal or retroflexion. Complete closure of the canal of course must be relieved first by dilatation to afford room for washing out the uterus and subsequent drainage. When the stricture is at the os internum, time and patience are necessary to open the canal. This, if possible, should be accomplished by dilating the canal below the stricture and then pushing a very fine probe through the stricture. There is danger in puncturing the stricture with a knife, because it is difficult to determine the direction of the canal and hence danger of puncturing the wall of the uterus. Gradual dilatation is best. Owing to the friable condition of the uterine tissue laceration is sure to occur if forcible dilatation is practiced. When an opening has been made large enough to pass a uterine sound, a piece of gauze should be introduced to keep the parts from contracting. Better still is a tent of elm bark, carbolized before use. This tent is bland, sterile and swells a little which keeps up dilatation. When the cervix is dilatable, the canal should be made large enough to admit a reflux catheter. The uterus should be washed out with a five-per-cent. solution of carbolic acid and then packed with iodoform gauze. The packing should be left in forty-eight hours if there is no severe pain and rise of temperature. Upon removing the gauze the uterus should be washed out with boiled water and iodoform powder introduced, in

the way described in the treatment of cervical endometritis. Owing to the difficulty of handling iodoform I have used peroxide of hydrogen and found it very useful. When a reliable preparation can be obtained it gives most satisfactory results, providing it is used twice or three times a day.

Owing to the difficulty of obtaining reliable preparations of peroxide of hydrogen and the fact that it is easily decomposed by heat and exposure, I have lately used a preparation made by McKesson & Robbins. It is an aqueous solution of dioxide of hydrogen. It is called pyrozone. A three-per-cent. solution is the one which I have used. I have not had sufficient experience so far to enable me to say that this pyrozone is all that it is claimed to be.

In cases complicated with retroversion the malposition must be corrected in order to be able to wash out the uterus thoroughly and to keep up drainage. The treatment of retroversion is very difficult when the vagina is contracted, as it usually is after the climacteria: In fact it is impossible to replace the thin-walled uterus that is distended with the products of inflammation. Thorough dilatation and evacuation must first be made and then by the use of a tampon or a soft ring pessary the posterior vaginal wall may be carried backward far enough to keep the fundus uteri from falling downward below the level of the cervix. Free drainage may be obtained although the uterus may still be retroverted in a slight degree. Prolapsus also requires to be corrected.

Both patient and surgeon are likely to become discouraged with the treatment which is sure to be tedious, especially if not well understood. This has raised the question in my mind whether hysterectomy would not be justifiable in the worst cases. I have seen the uterus removed, supposedly for cancer, but really in senile endometritis, and the results have been good. Still I would prefer to employ the treatment recommended here and not until that had failed, would I resort to hysterectomy.

In cases of senile endometritis complicated with complete prolapsus, vaginal hysterectomy is the proper treatment in all cases excepting in those whose general health presents a contra-indication. Dr. Edebohls has done hysterectomy in cases of complete prolapsus and although I have succeeded in relieving such displacement in the majority of cases without removing the uterus, I resort to hysterectomy without the least hesitation, and with confidence in the results, in cases of senile endometritis and complete prolapsus.

